

SEQUENCE LISTING

1 GENERAL INFORMATION

i) APPLICANT: Scandinavian Biotechnology Research AB

ii) TITLE OF INVENTION: Use of a class of enzymes and their encoding genes to increase oil content in transgenic organisms

iii) Number of sequences: 2

2) INFORMATION FOR SEQ ID NO:1:

1) SEQUENCE CHARACTERISTICS:

Λ) LENGTH: 1833 bases

B) TYPE: nucleic acid

c) STRANDEDNESS: single

D) TOPOLOGY: linear

ii) MOLECULE TYPE: DNA

iii) SEQUENCE DESCRIPTION:: SEQ ID NO: 1:

| | | | | | |
|------------|------------|------------|------------|------------|-----|
| ATGACGGAGA | CTAAGGATT | GTTGCAAGAC | GAAGAGTTTC | TTAAGATCCG | 50 |
| CAGACTCAAT | TCCGCAGAAG | CCAACAACG | GCATTCGGTC | ACGTACGATA | 100 |
| ACGTGATCCT | GCCACAGGAG | TCCATGGAGG | TTTCGCCACG | GTCGTCTACC | 150 |
| ACGTCGCTGG | TGGAGCCAGT | GGAGTCGACT | GAAGGAGTGG | AGTCGACTGA | 200 |
| GGCGGAACGT | GTGGCAGGGA | AGCAGGAGCA | GGAGGAGGAG | TACCCTGTGG | 250 |

16

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|------------|-------------|------------|------------|------------|------|
| ACGCCACAT | GCAAAAGTAC | CTTTCACACC | TGAAGAGCAA | GTCTCGGTCG | 300 |
| AGGTTCACC | GAAAGGATGC | TAGCAAGTAT | GTGTCGTTTT | TTGGGGACGT | 350 |
| GAGTTTTGAT | CCTCGCCCCA | CGCTCCTGGA | CAGCGCCATC | AACGTGCCCT | 400 |
| TCCAGACGAC | TTTCAAAGGT | CCGGTGCTGG | AGAAACAGCT | CAAAAATTTA | 450 |
| CAGTTGACAA | AGACCAAGAC | CAAGGCCACG | GTGAAGACTA | CGGTGAAGAC | 500 |
| TACGGAGAAA | ACGGACAAGG | CAGATGCCCC | CCCAGGAGAA | AAACTGGAGT | 550 |
| CGAACTTTTC | AGGGATCTAC | GTGTTCGCAT | GGATGTTCTT | GGGCTGGATA | 600 |
| GCCATCAGGT | GCTGCACAGA | TTACTATGCG | TCGTACGGCA | GTGCATGGAA | 650 |
| TAAGCTGGAA | ATCGTGCAGT | ACATGACAAC | GGACTTGTTT | ACGATCGCAA | 700 |
| TGTTGGACTT | GGCAATGTTT | CTGTGCACTT | TCTTCGTGGT | TTTCGTGCAC | 750 |
| TGGCTGGTGA | AAAAGCGGAT | CATCAACTGG | AAGTGGACTG | GGTTCGTTGC | 800 |
| AGTGAGCATC | TTGAGTTGG | CTTTCATCCC | CGTGACGTTT | CCCATTTACG | 850 |
| TCTACTACTT | TGATTTCAAC | TGGGTCACGA | GAATCTTCCT | GTCCTGCAC | 900 |
| TCCGTGGTGT | TTGTTATGAA | GAGCCACTCG | TTTGCCTTTT | ACAACGGGTA | 950 |
| TCTTTGGGAC | ATAAAGCAGG | AACTCGAGTA | CTCTTCCAAA | CAGTTGCAAA | 1000 |
| AATACAAGGA | ATCTTTGTCC | CCAGAGACCC | GCGAGATTCT | GCAAAAAGT | 1050 |
| TGCGACTTTT | GCCTTTTTCGA | ATTGAACTAC | CAGACCAAGG | ATAACGACTT | 1100 |

17

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|---|------|
| CCCCAACAAC ATCAGTTGCA GCAATTTCTT CATGTTCTGT TTGTTCCCCG | 1150 |
| TCCTCGTGTA CCAGATCAAC TACCCAAGAA CGTCGCGCAT CAGATGGAGG | 1200 |
| TATGTGTTGG AGAAGGTGTG CGCCATCATT GGCACCATCT TCCTCATGAT | 1250 |
| GGTCACGGCA CAGTTCTTCA TGCACCCGGT GGCCATGCGC TGTATCCAGT | 1300 |
| TCCACAACAC GCCCACCTTC GGC GGCTGGA TCCCCGCCAC GCAAGAGTGG | 1350 |
| TCCACCTGC TCTTCGACAT GATTCCGGGC TTCCTGTTC TGTACATGCT | 1400 |
| CACGTTTTTAC ATGATATGGG ACGCTTTATT GAATTGCGTG GCGGAGTTGA | 1450 |
| CCAGGTTTGC GGACAGATAT TTCTACGGCG ACTGGTGGAA TTGCGTTTCG | 1500 |
| TTTGAAGAGT TTAGCAGAAT CTGGAACGTC CCCGTTCA CA AATTTTACT | 1550 |
| AAGACACGTG TACCACAGCT CCATGGGCGC ATTGCATTTG AGCAAGAGCC | 1600 |
| AAGCTACATT ATTTACTTTT TTCTTGAGTG CCGTGTTCCA CGAAATGGCC | 1650 |
| ATGTTCGCCA TTTTCAGAAG GGTAGAGGA TATCTGTTCA TGTTCCA ACT | 1700 |
| GTCGCAGTTT GTGTGGACTG CTTTGAGCAA CACCAAGTTT CTACGGGCAA | 1750 |
| GACCGCAGTT GTCCAACGTT GTCTTTTCGT TTGGTGTCTG TTCAGGGCCC | 1800 |
| AGTATCATTA TGACGTTGTA CCTGACCTTA TGA | 1833 |

2) INFORMATION FOR SEQ ID NO:2:

i) SEQUENCE CHARACTERISTICS:

- A) LENGTH: 610 amino acids
B) TYPE: amino acid
D) TOPOLOGY: linear

ii) MOLECULE TYPE: protein

iii) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

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|------------|-----------|------------|------------|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Met 1 | Thr | Glu | Thr | Lys 5 | Asp | Leu | Leu | Gln | Asp 10 | Glu | Glu | Phe | Leu | Lys 15 | Ile |
| Arg | Arg | Leu | Asn 20 | Ser | Ala | Glu | Ala | Asn 25 | Lys | Arg | His | Ser | Val 30 | Thr | Tyr |
| Asp | Asn 35 | Val | Ile | Leu | Pro | Gln | Glu 40 | Ser | Met | Glu | Val | Ser 45 | Pro | Arg | Ser |
| Ser 50 | Thr | Thr | Ser | Leu | Val | Glu 55 | Pro | Val | Glu | Ser | Thr 60 | Glu | Gly | Val | Glu |
| Ser 65 | Thr | Glu | Ala | Glu | Arg 70 | Val | Ala | Gly | Lys | Gln 75 | Glu | Gln | Glu | Glu | Glu 80 |
| Tyr | Pro | Val | Asp 85 | Ala | His | Met | Gln | Lys | Tyr 90 | Leu | Ser | His | Leu | Lys 95 | Ser |
| Lys | Ser | Arg | Ser 100 | Arg | Phe | His | Arg | Lys 105 | Asp | Ala | Ser | Lys | Tyr 110 | Val | Ser |
| Phe | Phe | Gly 115 | Asp | Val | Ser | Phe | Asp 120 | Pro | Arg | Pro | Thr | Leu 125 | Leu | Asp | Ser |
| Ala 130 | Ile | Asn | Val | Pro | Phe | Gln 135 | Thr | Thr | Phe | Lys | Gly 140 | Pro | Val | Leu | Glu |
| Lys 145 | Gln | Leu | Lys | Asn | Leu 150 | Gln | Leu | Thr | Lys | Thr 155 | Lys | Thr | Lys | Ala | Thr 160 |
| Val | Lys | Thr | Thr 165 | Val | Lys | Thr | Thr | Glu | Lys 170 | Thr | Asp | Lys | Ala | Asp 175 | Ala |
| Pro | Pro | Gly 180 | Glu | Lys | Leu | Glu | Ser | Asn 185 | Phe | Ser | Gly | Ile | Tyr 190 | Val | Phe |
| Ala 195 | Trp | Met | Phe | Leu | Gly | Trp | Ile 200 | Ala | Ile | Arg | Cys | Cys 205 | Thr | Asp | Tyr |

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19

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|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr 210 | Ala | Ser | Tyr | Gly | Ser | Ala | Trp | Asn | Lys | Leu | Glu | Ile | Val | Gln | Tyr |
| Met 225 | Thr | Thr | Asp | Leu | Phe | Thr | Ile | Ala | Met | Leu | Asp | Leu | Ala | Met | Phe |
| Leu | Cys | Thr | Phe | Phe | Val | Val | Phe | Val | His | Trp | Leu | Val | Lys | Lys | Arg |
| Ile | Ile | Asn | Trp | Lys | Trp | Thr | Gly | Phe | Val | Ala | Val | Ser | Ile | Phe | Glu |
| Leu | Ala | Phe | Ile | Pro | Val | Thr | Phe | Pro | Ile | Tyr | Val | Tyr | Tyr | Phe | Asp |
| Phe | Asn | Trp | Val | Thr | Arg | Ile | Phe | Leu | Phe | Leu | His | Ser | Val | Val | Phe |
| Val | Met | Lys | Ser | His | Ser | Phe | Ala | Phe | Tyr | Asn | Gly | Tyr | Leu | Trp | Asp |
| Ile | Lys | Gln | Glu | Leu | Glu | Tyr | Ser | Ser | Lys | Gln | Leu | Gln | Lys | Tyr | Lys |
| Glu | Ser | Leu | Ser | Pro | Glu | Thr | Arg | Glu | Ile | Leu | Gln | Lys | Ser | Cys | Asp |
| Phe | Cys | Leu | Phe | Glu | Leu | Asn | Tyr | Gln | Thr | Lys | Asp | Asn | Asp | Phe | Pro |
| Asn | Asn | Ile | Ser | Cys | Ser | Asn | Phe | Phe | Met | Phe | Cys | Leu | Phe | Pro | Val |
| Leu | Val | Tyr | Gln | Ile | Asn | Tyr | Pro | Arg | Thr | Ser | Arg | Ile | Arg | Trp | Arg |
| Tyr | Val | Leu | Glu | Lys | Val | Cys | Ala | Ile | Ile | Gly | Thr | Ile | Phe | Leu | Met |
| Met | Val | Thr | Ala | Gln | Phe | Phe | Met | His | Pro | Val | Ala | Met | Arg | Cys | Ile |
| Gln | Phe | His | Asn | Thr | Pro | Thr | Phe | Gly | Gly | Trp | Ile | Pro | Ala | Thr | Gln |
| Glu | Trp | Phe | His | Leu | Leu | Phe | Asp | Met | Ile | Pro | Gly | Phe | Thr | Val | Leu |
| Tyr | Met | Leu | Thr | Phe | Tyr | Met | Ile | Trp | Asp | Ala | Leu | Leu | Asn | Cys | Val |
| Ala | Glu | Leu | Thr | Arg | Phe | Ala | Asp | Arg | Tyr | Phe | Tyr | Gly | Asp | Trp | Trp |
| Asn | Cys | Val | Ser | Phe | Glu | Glu | Phe | Ser | Arg | Ile | Trp | Asn | Val | Pro | Val |
| His | Lys | Phe | Leu | Leu | Arg | His | Val | Tyr | His | Ser | Ser | Met | Gly | Ala | Leu |

